

FREDERICK G. GRIFFIN, P.E.  
CLEVE WATKINS, P.E.  
JOHN T. TENGDIN, P.E.  
HOWARD C. TURNAGE, P.E.

d/b/a:  
Frederick G. Griffin  
Professional Corporation  
In North Carolina

FCC - MAILROOM

In the Matter of:

Public Documents Filing

FCC Docket No. 96-86

**Date:** August 15, 2003

By: Frederick G. Griffin, P.E.

By this letter I am requesting that all of the attached documents be filed with FCC Docket No. 96-86 for public record.

Respectfully submitted,

Fredrick H. Griffin PE

Frederick G. Griffin, P.E.



# FREDERICK G. GRIFFIN, P.C.

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Three Decades Serving Local Governments

d/b/a:  
Frederick G. Griffin  
Professional Corporation  
In North Carolina

June 25, 2003

Ted Dempsey  
Chairman, Implementation Subcommittee  
NCC  
144 Park Blvd.  
Massapequa, NY 11758

Subject: National Need – Reflections

cc: FCC Docket 96-86

Ted,

After attending the recent Motorola consultant seminar, which you also attended, I then attended the ACPO National Homeland Security seminar in Washington, DC. I have come to the realization that what is going on in Docket 96-86 and the NCC is not meeting the national need. Things have changed and the FCC needs to recognize this and change course on the 700MHz band spectrum to support Homeland Security.

As things are and might be:

As you and I both learned at the same time, the APCO P25 standard is not a standard at all in the normal context. It is a vendor contracting infrastructure document. This arises out of the vendor option for three feature sets; mandatory, optional and value added. What this means is that the subscriber manufacturers are at the mercy of the infrastructure supplier. AT this time one – Motorola.

Two other defects existing at this time are: First – the lack of console interface documents thus console suppliers are locked and at the mercy of the infrastructure supplier, second – there are no intersystem documents so that two adjacent systems have no assurance of being connected on an open standards basis.

The funding at the Federal level is being directed toward APCO P25 systems directly. Redoing what was done in the past with fixed location frequencies with the results of the above is that what is evolving is an uncontrolled, unregulated monopoly, and hence what we are seeing is the APCO P25 system costs 22% - 55% above other comparable systems.

What then does the nation need?

The nation needs:

- The ability to float frequencies where they are needed (like cellular, PCS and Nextel).
- The separation of government infrastructure control from vendors to users.
- The ability to transport subscriber units nationwide, like cellular, PCS, and Nextel.
- Critical communications infrastructure not being used as a pawn in the political process.
- A purchasing / user organization on parity with vendors in technical management and control.

Reality:

- The national government networks are dynamic in evolution, implementation, and operation.
- Networking [interoperability] cannot be achieved by the way things were done in the past.
- Networking [interoperability] cannot be achieved utilizing static industry standards that take years if not decades to develop.

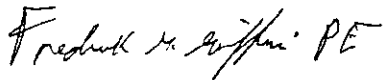
The solution:

The frequency and infrastructure [not subscribers] needs to be under the auspice of national/regional structuring.

With my new enlightenment and the changes as a result of the events of 9/11, I cannot support the fixed static regional planning process.

A new and different methodology regulatory structure must be found for the good of the nation.

Sincerely,



Frederick G. Griffin, P.E.  
President

FGG/cft

**Frederick Griffin**

---

**From:** "Dempsey, Ted" <EDempsey@IXPCorp.com>  
**To:** "Frederick Griffin" <fggriffin.pc@worldnet.att.net>  
**Sent:** Monday, June 30, 2003 10:34 PM  
**Subject:** RE: National Need - Reflections

Fred,

I read your letter with great interest. I need to reply to your letter as you obviously have some concerns regarding our mission. I will try to call you Tuesday to discuss the issues. I appreciate your candor.

Ted

*Edward J. Dempsey*  
*iXP Corp.*

Empire State Building  
350 Fifth Ave. Suite 816  
New York, NY 10118  
Office 212-356-5101  
Mobile 917-991-8577  
edempsey@ixpcorp.com

-----Original Message-----

**From:** Frederick Griffin [mailto:fggriffin.pc@worldnet.att.net]  
**Sent:** Thursday, June 26, 2003 11:51 AM  
**To:** Dempsey, Ted  
**Subject:** National Need - Reflections

Ted,

Please see the attached letter.

Best,

Fred Griffin

Mo reply  
7/15/03

10:20 AM



# Federal Communications Commission

**The FCC Acknowledges Receipt of Comments From ...  
Frederick G. Griffin  
...and Thank You for Your Comments**

Your Confirmation Number is: '200373041686 '

Date Received: Jul 3 2003

Docket: 96-86

Number of Files Transmitted: 1

File Name	File Type	File Size (bytes)
COMMENT	Microsoft Word	103937

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updated 02/11/02



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d/b/a:  
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Professional Corporation  
in North Carolina

July 10, 2003

Michael K. Powell  
Chairman  
Federal Communications Commission  
445 12th Street SW  
Washington, DC 20554

Tom Ridge  
U.S. Department of Homeland Security  
Washington, DC 20538

Senator John Warner  
225 Russell Senate Office Building  
Washington, DC 20510

Senator John McCain  
241 Russell Senate Office Building  
Washington, DC 20510

Virgil H. Goode  
70 East Court Street, Rm 215  
Rocky Mt, VA 24151

Federal Trade Commission  
Office of Policy and Evaluation  
Room 394  
600 Pennsylvania Avenue, NW  
Washington, DC 20580

cc: NCC List Serve

Dear Addressees,

It has been brought to my attention that the attached letter may in fact be misaddressed or should be addressed to each of you. By this transmittal I am making your office aware of the situation and making myself available to discuss the matter with whomever in your office whose primary responsibility is national security issues.

Regarding my credentials, please visit my website: [www.fggpc.com](http://www.fggpc.com).

Sincerely,

Frederick G. Griffin, P.E.  
President

FGG/cft

**Bernie Klein**

---

**From:** "John Powell" <jpowell@uclink.berkeley.edu>  
**To:** "Frederick Griffin" <fggriffin.pc@worldnet.att.net>  
**Cc:** "NCC ListServe" <nccall@ntoc.net>; "NPSTC General Distribution List" <NPSTC-GENERAL-L@npstc.nlectc.du.edu>; "Craig Jorgensen" <jorgensen@sisna.com>  
**Sent:** Wednesday, August 06, 2003 4:08 PM  
**Subject:** Re: Response to NATOA Letter  
 Fred and the NCC List,

This email is in response to a paper prepared by the "Tech Ed" committee of the National Association of Telecommunications Officers and Advisors. The mission of NATOA, from its website, is "to support and serve the telecommunications interests and needs of local governments. We are a professional association made up of individuals and organizations responsible for - or advising those responsible for - telecommunications policies and services in local governments throughout the country." I have not attached this paper because of its already wide circulation. However, its content is generally included verbatim in my response below.

It is unfortunate that authors do not talk to knowledgeable practitioners and/or engineers when they prepare these kinds of papers, as evidenced in this case by some of the major technical errors. In this case, the author is generally so far off base that he not only is in a different ballpark, but playing a different sport! I've cut in comments to his text below; my comments are prefaced with asterisks. I apologize for being blunt in my response, but papers like this proliferate and are read by decision makers who look only at the source organization as making the content truthful, resulting in confusion and many hours of "clean-up" by those of us in the industry.

I am also very concerned when poorly written and/or incorrect information such as contained in this paper is widely distributed by people who know (or who certainly should know and are technically qualified to understand) that the information contained therein is grossly in error.

John Powell, Member  
 Project 25 Steering Committee

>>> Response to NATOA Letter:

By Bruce Anderson  
 Public Safety Radio

There have been some questions raised to the Tech Ed Committee about APCO 25, the standards upon which the public safety radio systems that our cities use are based. Phase I, which is in place now, was implemented in the late '80s to effect spectral efficiency, interoperability and security. Unfortunately, APCO 25, Phase I, went 0 for 3, according to my sources.

- \*When I reference "standards" in my response, I am referencing a suite of
- \*standards in the ANSI/TIA/EIA 102 series. These are commonly known as
- \*Project 25 standards and have been fully vetted by a recognized Standards
- \*Definition Organization (SDO), giving them full recognition by the American
- \*National Standards Institute (ANSI). Because Project 25 uses this open
- \*process, standards often take a long time to develop. However, this process
- \*ensures that the result can be referenced in all government procurements
- \*and also that any involved Intellectual Property (patents) are offered to all
- \*interested manufacturers under fair and reasonable terms.

8/7/03

Page 2 of 3

- \*Initial work on the development of Project 25 (APCO was dropped from the
- \*name years ago to recognize the industry-wide support for this effort) began
- \*in 1989. Phase I (the 12.5 kHz standards suite) was completed in 1997. Its
- \*batting record is 5 for 5 in all of the target areas: spectrum efficiency,
- \*interoperability, ease of use, forward migration and competitive
- \*procurement. Project 25 is driven by very knowledgeable and technically
- \*competent members of the user community; it is not controlled by the radio
- \*manufacturers - this is a first for public safety.

For spectral efficiency APCO 25 broke the 25 MHz of spectrum available to the Public Safety community down into two 12.5 MHz blocks to allow for two channel operation. Unfortunately, the necessary guard band frequency was not figured in, so there is still only room for one channel to operate.

- \*It is actually kHz, not MHz. P25 Phase I (12.5 kHz) has significantly improved
- \*receiver and transmitter characteristics over 12.5 kHz analog, as technically
- \*defined in a recent article:

\*

- \*"P25 receivers have significantly better adjacent channel rejection than 12.5
- \*kHz analog NB receivers. The P25 spec is 60dB, with test signals selected
- \*for their equivalence to real-world signals. That is, 60dB of ACR is what
- \*you can expect in the field. Compare this with the analog spec of 45dB for
- \*class A or 40dB for class B (ref TIA-EIA-603-A). Thus, the receiver
- \*difference between P25 and 12.5 kHz analog is enormous. On the transmit
- \*side, P25 specifies an adjacent channel power ratio of 70db, compared to
- \*60/50dB for NB analog. This means that P25 transmitters will cause less
- \*interference than NB transmitters, because less signal will stray into
- \*adjacent channels."

\*

- \*So from an interference perspective, P25 Phase I is a substantially better
- \*solution than 12.5 kHz Analog NB.

\*

- \*Yes, you still should not try to run two adjacent channels in the same area
- \*(you never could in analog, either) but if you must, the P25 performance will
- \*be significantly better than its analog counterpart.

Interoperability: As it turns out APCO 25, Phase I, is not a true operating standard. It is a base standard with a long list of vendor options, which are proprietary. That means while a few functions may work with a different vendor's equipment, many, such as encryption, will not. This is also cited as the reason that the digital radios that our Public Safety folks use are more expensive than analog equipment in a world where digitalization has drastically reduced the price of everything else. (Proprietary is good for the bottom line.)

- \*P25 radios are fully interoperable with the exception of a limited number of
- \*vendor-specific options. It is these vendor-specific options that provide the
- \*manufacturers with the flexibility needed to meet specific market needs.



\*

\*All critical technical and user features and functions, as determined  
 \*by a representative group of users, are included in the basic standards.  
 \*Should any of these manufacturer-specific options reach a point of  
 \*criticality, the P25 Steering Committee has the right to declare them  
 \*"standard options" at which point they will be placed into the standard.  
 \*Encryption - a full suite running from DES to triple-DES to AES - is  
 \*included in the Project 25 standards series; these are fully compatible  
 \*between vendors. In fact, it appears the FCC will be requiring P25 with  
 \*AES encryption for the 700 MHz interoperability channels.

\*

\*The issue of cost is, more than anything, due to radio quality and economies  
 \*of scale. These are MIL-Spec radios that are built to operate in  
 \*environments where nobody would dare take a cell phone. P25 transmitters  
 \*typically operate at significantly higher power than their cellular (and  
 \*TETRA) counterparts. Finally, in the first quarter of 2003 there were 107.6  
 \*million cell phones shipped worldwide (according to IDC). By comparison,  
 \*P25 radios numbered in the low tens of thousands at best.

\*

\* While the numerical differences mean a lot, the bigger issue is amortization  
 \*of development costs. The cost of development for a P25 radio would be  
 \*comparable to that of a cell phone. However, this cost would need to be  
 \*recovered over a much smaller volume, hence another reason for the higher  
 \*price. We should be happy that the price does not represent the full 4 orders  
 \*of magnitude difference in quantity!

Security: APCO 25 made the mistake of locking into one security code (DES),  
 which has become less secure over the years. AES, a newer encryption method  
 that is much more effective, cannot be utilized as it is not allowed for in  
 APCO 25. The same is true for the IMBE VO coder, which has been supplanted  
 by AMBE.

\*See comments on P25 including all encryption modes (DES to AES) above.  
 \*DES has not become "less secure" over the years. Rather, AES has been  
 \*developed in recent years, is more secure than its DES counterpart, and  
 \*(importantly, especially in a portable environment) requires significantly  
 \*less processor power to implement than does DES.

\*

\*The IMBE vocoder was selected after significant testing by an independent and  
 \*qualified laboratory. Its characteristics, as pertinent to the public safety market,  
 \*left it shoulders above the competition when the selection was made. However, a  
 \*change to the vocoder (such as AMBE, a relatively new technology) would ruin  
 \*interoperability with the tens of thousands of P25 radios already fielded. We are,  
 \*however, examining a half-rate vocoder for Phase II TDMA that is substantially  
 \*compatible with the original IMBE vocoder (maintaining backward compatibility)  
 \*and gives us significant added bit capacity in which to implement a "two-slot in  
 \*12.5 kHz" technology.

Europe has the TETRA standard, which has full feature interoperability  
 through open intellectual property rights. This means that all companies

must share their hardware and software information with each other so that their equipment will work together. As a result there is true competition in Europe, and the cost of radios is around \$1,200 instead of the \$4,500 to \$6,000 we have in the US.

- \*TETRA also allows proprietary features and, to the chagrin of many
- \*multi-vendor users, is not fully interoperable between vendors. With regard
- \*to cost, remember that TETRA and P25 are horses of a different color.
- \*Because of the lower transmitter power limit for TETRA (typically 1 watt vs
- \*up to 5 watts for P25), TETRA portables have a much reduced range and thus
- \*require significantly more infrastructure to provide coverage equal to P25.
- \*Also, TETRA does not support simulcast and its simplex mode (unit-to-unit
- \*without use of infrastructure) reverts to only one talk path per 25 kHz,
- \*twice that required for P25. Certain of the services in Europe,
- \*particularly ambulance and fire, are shying away from TETRA for this reason,
- \*and major contracts for TETRA systems have been cancelled in some parts of
- \*the world, notably Australia, due to system performance problems. Full
- \*featured TETRA radios can be purchased for around \$1200, but similarly
- \*featured P25 radio have been selling in the \$1800 range on recent
- \*competitive bids.

In fact, NOKIA tried to sell TETRA based equipment in the US, but was blocked by Motorola who had language in the agreement that rights to TETRA based equipment and intellectual rights were only good in Europe and could not be imported to the US.

- \*The TETRA MOU Group, of which Nokia was a leading contributor, would have
- \*been welcomed into the North American market with their modified TETRA
- \*product as a P25 Phase II offering (4-slot TDMA). However, they refused to
- \*consider including P25 Phase I in their subscriber radios (mobiles and
- \*portables) leaving the product completely incompatible with all of the
- \*fielded P25 equipment. The P25 Steering Committee rejected the TETRA
- \*proposal for this reason. Motorola indicated their upholding of the
- \*geographical restriction was for the same reason. IMPORTANTLY, as a
- \*signatory to the P25 IPR MOU, Motorola would have had no option but to
- \*license their TETRA patents for use in the North America on reasonable and
- \*equitable grounds, had the P25 Steering Committee adopted the TETRA MOU
- \*proposal for P25 Phase II.

The good news, is that APCO is working on Phase II, which should address some of these issues. The bad news is that Motorola experts are all over the committee working on Phase II. While there is nothing wrong with Motorola's participation, I personally like much of their equipment; we must insist that the US end up with a truly open and interoperable standard. Motorola currently has 80% of the US Public Safety radio business, and would probably like to keep it that way. I don't think that cities can afford the status quo, on several levels.

\*We, too, would like to see maximum competition. There are now over a  
\*dozen manufacturers of fully-compatible P25 equipment (base stations,  
\*mobiles, portables and test equipment). Unfortunately, today only one  
\*manufacturer is supplying infrastructure for major (large regional and  
\*statewide) systems. With completion of the Inter-RF Subsystem  
\*Interface (ISSI) slated for early next year, the P25 Steering Committee is  
\*hoping that we will finally see competitive procurement throughout the P25  
\*product range.

\*

\*John Powell, Member  
\*P25 Steering Committee

At 10:09 AM 8/6/2003 -0400, Frederick Griffin wrote:

Attached is the NATOA Tech. Ed. Committee report.

Fred Griffin

8/7/03

## **Frederick Griffin**

---

**From:** "Michael Wilhelm" <Michael.Wilhelm@fcc.gov>  
**To:** "Frederick Griffin" <fggriffin.pc@worldnet.att.net>  
**Cc:** "Bob Moesch" <moducom@ix.netcom.com>; "Joe Gallelli" <JoeGallelli@cs.com>; "Anne Paxson" <bap@baplaw.com>; "Bert Weintraub" <Bert.Weintraub@fcc.gov>; "Joy Alford" <Joy.Alford@fcc.gov>; "John Powell" <jpowell@uclink.berkeley.edu>; "Dempsey, Ted" <EDempsey@IXPCorp.com>; <tcolman@du.edu>; "Robert Schlieman" <rschliem@capital.net>; <glen.nash@dgs.ca.gov>; <tstein@isdnlc.com>; "Peter Daronco" <Peter.Daronco@fcc.gov>; <wallmank@wallman.com>; <speidelbo@tycoelectronics.com>  
**Sent:** Wednesday, August 06, 2003 1:46 PM  
**Subject:** RE: My letters to Ted Dempsey

The NCC went out of existence at midnight, July 25, 2003, when its Charter expired. A letter containing the final recommendations of the Steering Committee made at the NCC's final meeting on July 17, 2003 was delivered to the FCC's Chairman on July 25, 2003. Pursuant to the Federal Advisory Committee Act, the NCC is now a nullity and can make no further recommendations to the FCC. Accordingly, as a matter of law, your request must be, and hereby is, denied.

Best regards,

Michael J. Wilhelm  
Legal Advisor  
Public Safety and Private Wireless Division  
Wireless Telecommunications Bureau  
Federal Communications Commission

-----Original Message-----

**From:** Frederick Griffin [mailto:fggriffin.pc@worldnet.att.net]  
**Sent:** Tuesday, August 05, 2003 4:11 PM  
**To:** Michael Wilhelm  
**Cc:** Bob Moesch; Joe Gallelli; Anne Paxson  
**Subject:** My letters to Ted Dempsey

As of this date, neither Ted Dempsey nor Tom Tolman will return communications. I am specifically requesting that the attached email and the reference be included in the NCC report to the Commission.

I view this as very important, unfinished business.

In fact, the lack of this being an agenda item with appropriate discussion leads me to question if my freedom of speech guarantees under the US Constitution have not already been impaired.

Frederick G. Griffin

8/6/03

**Bernie Klein**

---

**From:** "Dempsey, Ted" <EDempsey@iXPCorp.com>  
**To:** "Frederick Griffin" <fggriffin.pc@worldnet.att.net>; "NCC ListServe"  
**Sent:** Wednesday, August 06, 2003 3:45 PM  
**Subject:** RE: FYI  
Fred,

Where did this come from? And who is the author? Does Motorola know they have 80% of the market? Sounds like some bad info here.

Ted

*Edward J. Dempsey*  
*iXP Corp.*  
Empire State Building  
350 Fifth Ave. Suite 816  
New York, NY 10118  
Office 212-356-5101  
Mobile 917-991-8577  
edempsey@ixpcorp.com

-----Original Message-----

**From:** Frederick Griffin [mailto:fggriffin.pc@worldnet.att.net]  
**Sent:** Wednesday, August 06, 2003 10:09 AM  
**To:** NCC ListServe  
**Subject:** FYI

Attached is the NATOA Tech. Ed. Committee report.

Fred Griffin

8/7/03

**Bernie Klein**

**From:** "Miller, Larry" <LarryM@ashto.org>  
**To:** "John Powell" <jpowell@uclink.berkeley.edu>; "Frederick Griffin" <fggriffin.pc@worldnet.att.net>  
**Cc:** "NCC ListServe" <nccall@ntoc.net>; "NPSTC General Distribution List" <NPSTC-GENERAL-L@npstc.nlectc.du.edu>; "Craig Jorgensen" <jorgensen@sisna.com>; "Spec. Comm. on Wireless Technology" <Wireless@ashto.org>  
**Sent:** Thursday, August 07, 2003 9:01 AM  
**Subject:** RE: Response to NATOA Letter

I know that this horse has been beaten to death but I would like an answer to one question. Is it true that the IPR for the fixed infrastructure equipment is not licensed to any manufacturer other than Motorola? If that is true then the standard is not truly open. If only one vendor can offer the fixed equipment then buyers are at the mercy of sole source purchasing.

-----Original Message-----

**From:** John Powell [mailto:jpowell@uclink.berkeley.edu]  
**Sent:** Wednesday, August 06, 2003 4:09 PM  
**To:** Frederick Griffin  
**Cc:** NCC ListServe; NPSTC General Distribution List; Craig Jorgensen  
**Subject:** Re: Response to NATOA Letter

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John Powell, Member  
 Project 25 Steering Committee

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 Public Safety Radio

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For spectral efficiency APCO 25 broke the 25 MHz of spectrum available to the Public Safety community down into two 12.5 MHz blocks to allow for two channel operation. Unfortunately, the necessary guard band frequency was not figured in, so there is still only room for one channel to operate.

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 \*receiver and transmitter characteristics over 12.5 kHz analog, as technically  
 \*defined in a recent article:

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\*"P25 receivers have significantly better adjacent channel rejection than 12.5  
 \*kHz analog NB receivers. The P25 spec is 60dB, with test signals selected  
 \*for their equivalence to real-world signals. That is, 60dB of ACR is what  
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 \*60/50dB for NB analog. This means that P25 transmitters will cause less  
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 \*adjacent channels."

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\*Yes, you still should not try to run two adjacent channels in the same area  
 \*(you never could in analog, either) but if you must, the P25 performance will  
 \*be significantly better than its analog counterpart.

Interoperability: As it turns out APCO 25, Phase I, is not a true operating standard. It is a base standard with a long list of vendor options, which are proprietary. That means while a few functions may work with a different vendor's equipment, many, such as encryption, will not. This is also cited as the reason that the digital radios that our Public Safety folks use are more expensive than analog equipment in a world where digitalization has drastically reduced the price of everything else. (Proprietary is good for the bottom line.)

- \*P25 radios are fully interoperable with the exception of a limited number of
- \*vendor-specific options. It is these vendor-specific options that provide the
- \*manufacturers with the flexibility needed to meet specific market needs.

\*

- \*All critical technical and user features and functions, as determined
- \*by a representative group of users, are included in the basic standards.
- \*Should any of these manufacturer-specific options reach a point of
- \*criticality, the P25 Steering Committee has the right to declare them
- \*"standard options" at which point they will be placed into the standard.
- \*Encryption - a full suite running from DES to triple-DES to AES - is
- \*included in the Project 25 standards series; these are fully compatible
- \*between vendors. In fact, it appears the FCC will be requiring P25 with
- \*AES encryption for the 700 MHz interoperability channels.

\*

- \*The issue of cost is, more than anything, due to radio quality and economies
- \*of scale. These are MIL-Spec radios that are built to operate in
- \*environments where nobody would dare take a cell phone. P25 transmitters
- \*typically operate at significantly higher power than their cellular (and
- \*TETRA) counterparts. Finally, in the first quarter of 2003 there were 107.6
- \*million cell phones shipped worldwide (according to IDC). By comparison,
- \*P25 radios numbered in the low tens of thousands at best.

\*

- \* While the numerical differences mean a lot, the bigger issue is amortization
- \*of development costs. The cost of development for a P25 radio would be
- \*comparable to that of a cell phone. However, this cost would need to be
- \*recovered over a much smaller volume, hence another reason for the higher
- \*price. We should be happy that the price does not represent the full 4 orders
- \*of magnitude difference in quantity!

\*

Security: APCO 25 made the mistake of locking into one security code (DES), which has become less secure over the years. AES, a newer encryption method that is much more effective, cannot be utilized as it is not allowed for in APCO 25. The same is true for the IMBE VO coder, which has been supplanted by AMBE.

- \*See comments on P25 including all encryption modes (DES to AES) above.

- \*DES has not become "less secure" over the years. Rather, AES has been
- \*developed in recent years, is more secure than its DES counterpart, and
- \*(importantly, especially in a portable environment) requires significantly
- \*less processor power to implement than does DES.

\*



\*The IMBE vocoder was selected after significant testing by an independent and  
 \*qualified laboratory. Its characteristics, as pertinent to the public safety market,  
 \*left it shoulders above the competition when the selection was made. However, a  
 \*change to the vocoder (such as AMBE, a relatively new technology) would ruin  
 \*interoperability with the tens of thousands of P25 radios already fielded. We are,  
 \*however, examining a half-rate vocoder for Phase II TDMA that is substantially  
 \*compatible with the original IMBE vocoder (maintaining backward compatibility)  
 \*and gives us significant added bit capacity in which to implement a "two-slot in  
 \*12.5 kHz" technology.

Europe has the TETRA standard, which has full feature interoperability  
 through open intellectual property rights. This means that all companies  
 must share their hardware and software information with each other so that  
 their equipment will work together. As a result there is true competition  
 in Europe, and the cost of radios is around \$1,200 instead of the \$4,500 to  
 \$6,000 we have in the US.

\*TETRA also allows proprietary features and, to the chagrin of many  
 \*multi-vendor users, is not fully interoperable between vendors. With regard  
 \*to cost, remember that TETRA and P25 are horses of a different color.  
 \*Because of the lower transmitter power limit for TETRA (typically 1 watt vs  
 \*up to 5 watts for P25), TETRA portables have a much reduced range and thus  
 \*require significantly more infrastructure to provide coverage equal to P25.  
 \*Also, TETRA does not support simulcast and its simplex mode (unit-to-unit  
 \*without use of infrastructure) reverts to only one talk path per 25 kHz,  
 \*twice that required for P25. Certain of the services in Europe,  
 \*particularly ambulance and fire, are shying away from TETRA for this reason,  
 \*and major contracts for TETRA systems have been cancelled in some parts of  
 \*the world, notably Australia, due to system performance problems. Full  
 \*featured TETRA radios can be purchased for around \$1200, but similarly  
 \*featured P25 radio have been selling in the \$1800 range on recent  
 \*competitive bids.

In fact, NOKIA tried to sell TETRA based equipment in the US, but was  
 blocked by Motorola who had language in the agreement that rights to TETRA  
 based equipment and intellectual rights were only good in Europe and could  
 not be imported to the US.

\*The TETRA MOU Group, of which Nokia was a leading contributor, would have  
 \*been welcomed into the North American market with their modified TETRA  
 \*product as a P25 Phase II offering (4-slot TDMA). However, they refused to  
 \*consider including P25 Phase I in their subscriber radios (mobiles and  
 \*portables) leaving the product completely incompatible with all of the  
 \*fielded P25 equipment. The P25 Steering Committee rejected the TETRA  
 \*proposal for this reason. Motorola indicated their upholding of the  
 \*geographical restriction was for the same reason. IMPORTANTLY, as a  
 \*signatory to the P25 IPR MOU, Motorola would have had no option but to  
 \*license their TETRA patents for use in the North America on reasonable and

\*equitable grounds, had the P25 Steering Committee adopted the TETRA MOU  
\*proposal for P25 Phase II.

The good news, is that APCO is working on Phase II, which should address some of these issues. The bad news is that Motorola experts are all over the committee working on Phase II. While there is nothing wrong with Motorola's participation, I personally like much of their equipment; we must insist that the US end up with a truly open and interoperable standard. Motorola currently has 80% of the US Public Safety radio business, and would probably like to keep it that way. I don't think that cities can afford the status quo, on several levels.

\*We, too, would like to see maximum competition. There are now over a  
\*dozen manufacturers of fully-compatible P25 equipment (base stations,  
\*mobiles, portables and test equipment). Unfortunately, today only one  
\*manufacturer is supplying infrastructure for major (large regional and  
\*statewide) systems. With completion of the Inter-RF Subsystem  
\*Interface (ISSI) slated for early next year, the P25 Steering Committee is  
\*hoping that we will finally see competitive procurement throughout the P25  
\*product range.

\*

\*John Powell, Member  
\*P25 Steering Committee

At 10:09 AM 8/6/2003 -0400, Frederick Griffin wrote:

Attached is the NATOA Tech. Ed. Committee report.

Fred Griffin

8/7/03

**Bernie Klein**

---

**From:** "Edward J. Dempsey" <edempsey@optonline.net>  
**To:** "Frederick Griffin" <fggriffin.pc@worldnet.att.net>; "Michael K. Powell" <fccinfo@fcc.gov>;  
**Cc:** "NCC ListServe" <nccall@ntoc.net>  
**Sent:** Friday, August 08, 2003 2:55 AM  
**Subject:** RE: Attached Letters

Fred,

I am disappointed that you have chosen not to support the tremendous amount of work done by our committee at a time when we have closed out the NCC's work. As you well know the Implementation Subcommittee, of which you are a member, has worked hard putting together a planning process that addresses the many new conditions that were a result of September 11<sup>th</sup>. I personally witnessed the attacks and worked at Ground Zero to restore communications for the NYPD. I saw firsthand the problems that were the result of the current state of communications in the public safety field. I also saw the great work that was done by public safety agencies, equipment manufacturers, wireless and cellular providers and the federal government to provide interoperable communications for the first responders.

There is no simple solution. Your choice to denounce the regional plan process shows that you do not have an understanding of how the process was developed and how our local governments work. Major incidents and catastrophes are almost always responded to by regional first responders and there is little if any time at all to set up interoperable communications. This is why the regional process is so important. The name regional plan describes perfectly the ideology behind the process. We, the NCC, want the regions to plan for their unique needs as they know their environment best. We recommended that states be allocated channels to allow them to build systems that will have large footprints to cover the state's area of jurisdiction. Unique regions were formed around areas of population concentration that crossed state borders to allow for the unique requirements of metropolitan areas. Regions are encouraged to build regional systems rather than standalone solutions.

Regions and public safety agencies need to build systems that need to meet their immediate needs as first responders. A nationwide network will not help first responders in the critical stages of the incident. During the first few hours all of the responding agencies whether they are federal, state or local will work together using their regional interoperability system. The system can be based on common frequencies, system or protocols. I agree that many of these systems are not in place or not as built out as they should be, but that is a funding issue. If you truly believe that the nation needs a network you should work toward acquiring the funds for better regional communications systems. A nationwide system will not address the needs of the agencies that comprise the first responders and local governmental agencies.

I feel very strongly about the work that the NCC accomplished. It was an iterative and flexible process. And it was by the people who do the work. The process grew from input of those active in spectrum management. As the process unfolded we changed and improved on our original ideas. Some of the work that we accomplished in the very beginning changed drastically throughout the process and in my opinion always for the better. I would like to discuss this further with you and I believe that we can meet at the APCO conference if you are attending. If you feel the need to speak sooner please call me at your earliest convenience.

Ted

*Ted Dempsey*  
 edempsey@optonline.net  
 516-541-1132

-----Original Message-----

**From:** Frederick Griffin [mailto:fggriffin.pc@worldnet.att.net]  
**Sent:** Friday, July 11, 2003 2:09 PM  
**To:** Michael K. Powell; antitrust@ftc.gov  
**Cc:** NCC ListServe  
**Subject:** Attached Letters

Please see the 2-attached letters regarding land mobile radio systems.

Thank you,

8/8/03



**Satellite struggle**  
Wireless operators cry  
foul on FCC ruling.  
SEE PAGE 20



**Technically**  
Kinley examines high  
voltage problems.  
SEE PAGE 32



**Balloons**  
Will they someday  
replace towers?  
SEE PAGE 40

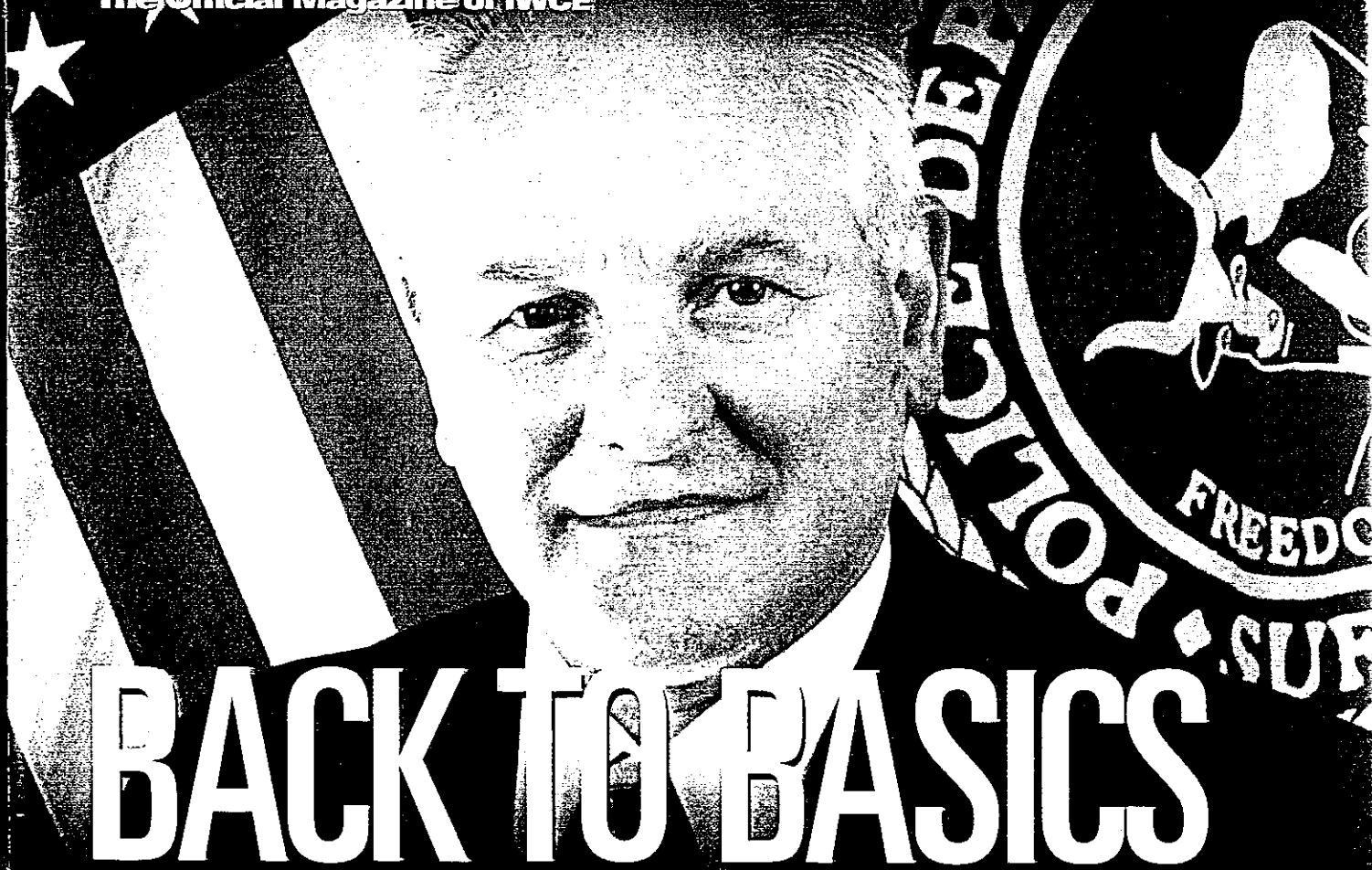
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AUGUST 2003

## MOBILE RADIO TECHNOLOGY

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# BACK TO BASICS

**New APCO chief supports Nextel plan, derides E911 delays.**  
Nikki Chandler's conversation with him begins on page 46.

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### ▶ Radio Shack in Iraq?

Doug Mohney reports on soldiers' radio problems in the field — and their own solutions.

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## FCC agenda out of sync with market

Lynchburg, Virginia

Dear Ted,

[Chairman Ted Dempsey

Implementation subcommittee, NCC]

After attending the recent Motorola consultant seminar, which you also attended, I then attended the APCO National Homeland Security seminar in Washington, D.C. I have come to the realization that what is going on in Docket 96-86 and the National Coordinating Committee is not meeting the national need. Things have changed and the FCC needs to recognize this and change course on the 700MHz band spectrum to support Homeland Security.

As things are and might be:

As you and I both learned at the same time, the APCO P25 standard is not a standard at all in the normal context. It is a vendor contracting infrastructure document. This arises out of the vendor option for three feature sets: mandatory, optional and value added. What this means is that the subscriber manufacturers are at the mercy of the infrastructure supplier. At this time one — Motorola.

Two other defects existing at this time are. First — the lack of console interface documents; thus console suppliers are locked and at the mercy of the infrastructure supplier. Second — there are no inter-system documents so that two adjacent systems have no assurance of being connected on an open standards basis.

The funding at the federal level is being directed toward APCO P25 systems directly. Redoing what was done in the past with

fixed location frequencies with the results of the above is that what is evolving is an uncontrolled, unregulated monopoly, and hence what we are seeing is the APCO P25 system costs 22 percent to 55 percent above other comparable systems.

What then does the nation need?

The nation needs:

- The ability to float frequencies where they are needed (like cellular, PCS and Nextel).
- The separation of government infrastructure control from vendors to users.
- The ability to transport subscriber units nationwide, like cellular, PCS, and Nextel.
- Critical communications infrastructure not being used as a pawn in the political process.
- A purchasing/user organization on parity with vendors in technical management and control.

Reality:

- The national government networks are dynamic in evolution, implementation, and operation.
- Networking [interoperability] cannot be achieved by the way things were done in the past.
- Networking [interoperability] cannot be achieved utilizing static industry standards that take years if not decades to develop.

The solution:

- The frequency and infrastructure [not subscribers] needs to be under the auspice of national/regional structuring.

With my new enlightenment and the

changes as a result of the events of Sept. 11, I cannot support the fixed static regional planning process.

A new and different methodology regulatory structure must be found for the good of the nation.

Frederick G. Griffin, P.E.

President

### A rebuttal

Albany, New York

I am dismayed that your transmittal to "the world" contains sweeping generalities and only a few crumbs of factual information. I am sure that many would take issue with your broad stroke statements about what cannot be done for Interoperability on a nationwide basis.

It is true that the Console Interface and the Inter-RF SubSystem Interface (ISSI) are still works in progress. And, although you didn't mention it, the Fixed Station Interface is also a work in progress. It may be relevant to understand that the direction of those standards development efforts was changed recently to become Internet Protocol based, which offers the potential for a more flexible, efficient, and robust network design.

You draw a broad brush picture of the Project 25 standards — as you refer to them. In point of fact, Project 25 is based on a definition of user needs embodied in a Statement of Requirements (SOR) document, which serves as the basis for the standards development effort of the Telecommunications Industry Association's TR-8 Engineering Committee.

The SOR was developed from input by representatives of local, state and federal public safety entities. The resulting standards that have been developed follow an American National Standards Institute process and ultimately become ANSI standards.

The standards that have been incorporated in the 700 MHz rules of the FCC (47 CFR §90.548 and §90.553) for

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Interoperability are in fact ANSI standards. These required Standards for Interoperability define the most basic mode of operation — conventional common air interface, as opposed to trunked FDMA or TDMA, and include clear and encrypted voice, and data communication.

Numerous manufacturers offer products that meet these requirements in one or more frequency bands. Some offer subscriber equipment, some also offer fixed stations, and others offer complete systems. In some cases, proprietary equipment is offered for complete systems, which includes the capability to support the FCC required Interoperability Standards.

Technology is evolving at such a rapid pace, that one must realize it is essential to have some baseline common mode of digital communication for communication interoperability to take place at all. Under such circumstances, the traditional requirement for a Public Safety system requiring a "mature technology/product" is no longer feasible. A mature technology or product is an obsolete technology or product in these times. The best we can hope for is to have a uniform method of communication that we can automatically fall back to when we need Interoperability between disparate systems. We have that in the present FCC rules cited above.

With regard to Regional Planning, this system of local involvement in the planning process allows for the types of variation that are appropriate and desired by the Public Safety entities within their Region. The State Interoperability Executive Committees (SIECs) were formulated to provide a level of uniformity for plan development, operation and administration of Interoperability on a statewide basis. The suggestion has been put forward to allow the SIECs to have jurisdiction over all FCC-designated Interoperability channels. And, while the FC has not yet acted favorably on the NCC recommendation for uniform nomenclature to describe the FCC-designated Interoperability Channels, it is possible that the SIECs could each require such uniform nomenclature within their Statewide Interoperability Plans. It is unclear why the FCC is inconsistent in this matter, since they have no problem specifying uniform nomenclature for the Emergency Medical Service UHF "MED" channels in 47 CFR §90.20(d)(66)(i).

Clearly, the U.S. Department of Homeland Security should be an active participant in each of the 50 SIECs, and this will go a long way toward solving your perceived Interoperability concerns.

If your letter to the FCC, FTC and others was intended for the Federal marketplace, was it really appropriate to send this to the FCC and the NCC, which do not have jurisdiction over Federal radio communication matters?

I am sorry that I am not able to attend the NCC meetings this week, as I am sure this correspondence deserves significant discussion to bring out the issues with accuracy, clarity and specificity. Hopefully some of the issues I have addressed above will add to the enlightenment.

Robert F. Schlieman  
Member of NCC  
APCO Project 25 Steering Committee  
Regional Planning Committees — 8, 30 and 55



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